



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF HAZARDOUS WASTE MANAGEMENT

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APR 1 6 1990

Janet Feldstein, Project Manager
New Jersey Compliance Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency - Region II
26 Federal Plaza
New York, NY 10278

Dear Ms. Feldstein:

Re: SCP Carlstadt Superfund Site ARAR's/Permit Equivalents First Operable Unit

Enclosed please find the discharge limits developed for a ground water treatment system discharging into Peach Island Creek. These limits were generated based on the analytical data collected as a part of the remedial investigation ongoing at the site.

Be advised that the effluent discharge limitations contained herein may be subject to change or revision based on the following:

- 1. Additional information regarding background concentrations in Peach Island Creek;
- 2. changes in the chemical characteristics of the ground water; and
- 3. changes in Federal and State regulations or water quality criteria.

If you have any questions concerning this package, please contact me at (609) 633-1455.

Sincerely,

Parunta a 7

Pamela A. Lange, Case Manager Bureau of Federal Case Management

PAL: cn

Enclosure

c: Linda Welkom, DWR/BGWPA
Steve MacGregor, DHSM/BEERA
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Part V

INTERIM CHRONIC TOXICITY TESTING METHODOLOGIES FOR USE IN THE NJPDES PERMIT PROGRAM

Version 1.0

February 1989

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Notice: Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

AUTHORITY AND PURPOSE

These interim methods for the conduct of whole effluent chronic toxicity testing are established under the authority of the NJPDES permitting program (N.J.A.C. 7:14A-2.9) for discharges to the waters of the State. They are intended as interim measures until the formal establishment of a laboratory certification program to govern the conduct of whole effluent chronic toxicity testing is established under N.J.A.C. 7:18. As such these methods are intended to be used to determine compliance with discharge permits issued under the authority of the NJPDES permit program. Tests are to be conducted in accordance with the general conditions and test organism specific method specifications contained in this document. All other conditions and specifications can be found in the cited USEPA methodologies (USEPA 1988, 1989).

Until a subchapter on chronic toxicity testing within the "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18) becomes effective, tests shall be conducted in conformance with the interim methodologies as designated herein. The laboratory performing the testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18-6, as required by N.J.A.C. 7:9-4.5(c)5.

Testing shall be in conformance with the subchapter on chronic toxicity testing within the "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18) when such regulations become effective. The laboratory performing the toxicity testing shall be within the chronic toxicity testing laboratory certification program to be established under that subchapter when it becomes effective.

These interim methods are incorporated into discharge permits as enforceable permit conditions. Each discharge permit will specify in Part IV of the permit the test species specific methods from this document which will be required under the terms of the discharge permit. Therefore, each individual permittee affected by these permit conditions has the right to comment on the methods applicable to their specific discharge during the public comment period on each individual permit. Although the test species specific methods for each permit are determined on a case-by-case basis, the purpose of this methods document is to assure consistency among dischargers and to provide certified laboratories with information on the universe of tests to be utilized so that they can make the necessary preparations.

GENERAL CONDITIONS

LABORATORY SAFETY, GLASSWARE, ETC.

All safety procedures, glassware cleaning procedures, etc., shall be in conformance with "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 2nd edition", (USEPA 1989), "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms" (USEPA 1988), or "Regulations Governing Laboratory Certification and Standards of Performance" (N.J.A.C. 7:18).

TEST CONCENTRATIONS

All testing is to be performed at a minimum of five effluent concentrations plus a dilution water control. One effluent concentration shall be the chronic permit limitation unless the existing data for the discharge indicate that the NOEC is expected to be significantly less than the permit limit. An effort shall be made to bracket the anticipated NOEC/LOEC test result.

DILUTION WATER - MARINE AND ESTUARINE WATERS

A high quality natural water, such as the Manasquan River Inlet (collected at high tide), is strongly recommended as the dilution water source for chronic toxicity testing with marine and estuarine organisms. The use of the receiving water as the dilution water source is not required. Saline waters prepared with hypersaline brine and deionized water may also be used as the base dilution water. Hypersaline brines shall be prepared from a high quality natural seawater and shall not exceed a concentration of 100 ppt.

The standard test salinity shall be 25 ppt, except for <u>Champia parvula</u>, which shall be tested at 30 ppt. Since most effluents are freshwater based, in most cases it will be necessary to adjust the salinities of the test concentrations to the standard test salinity.

The use of artificial seawater, prepared using artificial sea salts, is permitted but not recommended, only for the sheepshead minnow test (USEPA 1988, Method 1004) and for the mysid shrimp test (USEPA 1988, Method 1007). The acceptable sea salts include FORTY FATHOMS and HW MARINEMIX, as per the EPA marine chronic methods document (USEPA 1988). Use of any other salt(s) will require the submission in advance of adequate documentation, including at a minimum adequate standard reference toxicant data to demonstrate the acceptability of the salt(s) for use in chronic toxicity testing. They must be approved by the Department prior to the use.

Unless artificial seawater is to be used as the dilution water, hypersaline brine, concentrated to no more than 100 ppt, shall be the primary means of adjusting the test concentrations' salinities. In any test concentration, if the standard test salinity cannot be attained using 100 ppt hypersaline brine, the following procedure shall be used. This procedure shall not apply for any chronic toxicity testing using Champia parvula as the test organism.

- 1. Hypersaline brine, 100 ppt, shall be used to adjust the salinities of all test concentrations up to the standard test salinity, or the highest salinity attainable.
- 2. In those test concentrations where the standard test salinity cannot be attained using 100 ppt hypersaline brine, the salinity shall be brought up to the maximum attainable salinity using 100 ppt. hypersaline brine and shall then be adjusted above that salinity using artificial sea salts. Restrictions on the type of artificial sea salts as discussed above also apply.
- 3. A control prepared with hypersaline brine shall be included. An additional control prepared with artificial sea salts is recommended if sea salts are utilized as per paragraph 2, above.

The type of a dilution water for a permittee may not be changed without the prior approval of the Department.

Special attention should be given to the presence of required micronutrients in waters to be used for crustaceans. Refer to the specific test methodologies for more details.

If any distilled or deionized water is used, it should be prepared with Millipore Super QR or equivalent.

DILUTION WATER - FRESH WATERS

A high quality natural water, such as Round Valley Reservoir (if access is allowed) or Lake Hopatcong, is strongly recommended as the dilution water source for chronic toxicity testing with freshwater organisms. It is not required to perform the toxicity testing with the receiving water as dilution water. Tests performed with a reconstituted water or up to 20% Diluted Mineral Water (DMW) as dilution water are acceptable. The hardness of the dilution water must be within 10% of the hardness of the receiving water or 50 mg/L as CaCO₃, whichever is greater. The source of a dilution water for a permittee may not be changed without the prior approval of the Department. Reconstituted water and DMW should be prepared with Millipore Super Q^R or equivalent.

Special attention should be given to the presence of required micronutrients in waters to be used for crustaceans. Refer to the specific test methodologies for more details.

EFFLUENT SAMPLE COLLECTION

Effluent samples shall be representative of the discharge being regulated. For each discharge serial number (DSN), the effluent sampling location shall be the same as that specified in the NJPDES permit for other sampling parameters unless an alternate sampling point is specified in the NJPDES discharge permit. For industrial dischargers with a combined process/sanitary waste stream, effluent sampling shall be after chlorination, unless otherwise designated in the permit.

For continuous discharges, effluent sampling shall consist of 24 hour composite samples consisting either of equal volumes taken once every hour or of a flow-proportionate composite sample, unless otherwise approved by the Department. Effluent holding times and test solution renewal shall be consistent with the test organism specific methods in USEPA 1988 and 1989. For all other types of discharges, effluent sampling shall be conducted according to specifications contained within the discharge permit, or otherwise specified by the Department.

Except for filtration through a 2 mm or larger screen or an adjustment to the standard test salinity, no other adjustments to the effluent sample shall be made without prior written approval by the Department.

PHYSICAL CHENICAL MEASUREMENTS

At a minimum, the physical chemical measurements must be consistant with the referenced test methodology (USEPA 1988, 1989).

The photoperiods should be phased in and out over a period of thirty (30) minutes for each transition period.

STATISTICS

Statistical analysis should follow the protocols in USEPA (1988, 1989) to evaluate adverse effects. Generally, a significance level of 0.05 will be utilized to evaluate such effects.

A dilution factor of 0.3 or 0.5 can be used. However, the Department recommends the use of the 0.5 dilution factor due to the increased test precision. Note that this may require more than five dilutions to cover the entire range of effluent concentrations.

If separate NOEC's can be calculated from multiple test endpoints, as for example a reproductive end-point and a growth endpoint, the most sensitive end-point will be used to determine permit compliance.

NOTE: Use of nonparametric statistical analyses requires a minimum of four (4) replicates per test concentration. If the data for any particular test is not conducive to parametric analyses and if less than four (4) replicates were included, the test may not be acceptable to the Department.

STANDARD REFERENCE TOXICANT TESTING

All chronic testing shall be accompanied by testing with a standard reference toxicant as a part of the each laboratory's internal quality control program. Such a testing program should be consistent with the quality assurance/quality control protocols described in the USEPA chronic testing manuals for freshwater organisms and for marine and estuarine organisms (USEPA 1989, 1989). Laboratories may utilize the standard reference toxicant of their choice.

At a minimum, this testing should include an initial series of at least five reference toxicant tests for each test species method. This testing should be completed prior to the initiation of any chronic effluent toxicity testing for each test species method. The laboratory should forward two copies of the initial testing, including control charts, the name of the standard reference toxicant utilized, the supplier, and appropriate chemical analysis of the toxicant, to the following address:

Municipal/Industrial Biomonitoring Programs Wastewater Facilities Management Element Division of Water Resources CN-029
Trenton, NJ 08625-029

Subsequent testing should include testing of each batch of organisms obtained from a supplier and/or monthly testing of organisms cultured by the laboratory. Control charts should be maintained by the laboratory. Two copies of the control charts are to be forwarded annually to the Biomonitoring Programs at the above address. Results of appropriate chemical analyses of each lot of standard reference toxicant utilized must be included.

If standard reference toxicant tests fall outside the expected range of the control chart at a frequency greater than one in any twenty tests, a report shall be forwarded to the Biomonitoring Programs at the address above. This report shall include the identified problem which caused the value to fall outside the expected range and the corrective actions that have been taken by the laboratory. The Department may not accept or may require repeat testing for any required toxicity testing that may be affected by such an occurance.

METHODS SPECIFICATIONS

SUMMARY OF TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) LARVAL SURVIVAL AND GROWTH TEST

		·
1.	Test Type:	Static Renewal
2.	Test Duration:	7 days
3.	Renewal of Test Solution:	Daily
4	Age of Test Organisms:	Newly hatched larvae (<24 hours old). Testing with organisms up to 48 hours is allowed if they are all within one age group
5.	Dilution Factor:	0.3 or 0.5
6.	Number of Test Concentrations:	minimum 5 plus a control (a second control is optional when a dilution water other than the culture water is used)
7.	Number of Replicates per Each Concentration & Control:	4 (minimum of 3)
8.	Number of Larvae per Replicate:	15 (minimum of 10)
9.	Test Chamber Size:	500 ml recommended (covered)
10.	Test Solution Volume:	minimum 250 ml/chamber
11.	Loading Factor:	20 ml/organism
12.	Test Dilution Water:	natural water (60 micron mesh filtered), reconstituted water or up to 20% diluted mineral water (DMW). Reconstituted and DMW waters should be prepared with Millipore Super-QR or equivalant water. Aerate a minimum of 24 hours.
13.	Test Temperature:	25 <u>+</u> 1° C
14.	Aeration:	none, unless the DO concentration falls below

40% saturation then all

replicates. Rate should be less than 100 bubbles/min.

15. Feeding Regime:

Feed 0.1 ml newly hatched brine shrimp naupli twice daily, 6 hr. between feedings (at the beginning of the work day at time of renewal and at the end of the work day). No feeding day 7. Sufficient naupli should be added to produce an excess.

16. Photoperiod:

16 hr. light, 8 hr. darkness. 30 min. phase in and phase out recommended.

17. Light Intensity:

Ambient laboratory levels (10-20 uE/m2/s or 50-100 ft-c)

18. Cleaning:

Siphon daily, immediately before test solution renewal

19. Effects Measured:

Survival and growth (dry weight)

20. Test Acceptability:

≥80% control survival, ave. dry weight of surviving controls ≥ 0.25 mg

21. Weighing/Drying Proceedures:

Immediately prepare for drying and weighing or preserve in 70% ethanol to dry and weigh at a later date. Dry at 100°C for a min. 2 hrs or until constant weight is achieved.

22. Other Test Specifications in:

USEPA, 1989. Method 1000.0

SUMMARY OF TEST CONDITIONS FOR CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

Static renewal 1. Test type: 2. · Test duration: 3 broods (see 19) $25 + 1^{\circ}C$ 3. Temperature (°C): Ambient laboratory illumination Light quality: $10-20 \text{ uE/m}^2/\text{s}$, or 50-100 ft-c5. Light intensity: (ambient laboratory levels). Caution should be taken to avoid excessive photosynthetically mediated elevations in pH. 6. 16 h light, 8 h dark Photoperiod: 30 ml recommended (covered) Test chamber size: 7. 8. Test solution volume: 15 ml recommended. Test chambers should contain sufficient test solution to provide adequate surface area to maintain dissolved oxygen concentrations at or above 40 percent saturation Minimum 15 ml/animal 9. Loading factor: 10. Renewal of test solutions: Daily 11. Age of test organisms: Less than 24 h; and all released within a 8-h period 12. Number of neonates per Maximum of 1 replicates: Number of replicates per Minimum of 10 13. each concentration and control: 14. Number of test Minimum of 5 effluent concentrations concentrations: and a control. (A second control is

optional when a dilution water other than the culture water is used.)

15. Feeding regime:

Diet must include an algal component. USEPA (1989) recommends feeding 0.1ml/15ml each of YTC (yeast, trout chow and Cerophyl) and Selenastrum capricornatum suspension per exposure chamber daily. Alternatives include algal diets of: 1. Ankistrodesmus convolutus and Nitzschia frustulum, and 2. A. convolutus, Chlamydomonas reinhardti and N. frustulum (Cowgill et al., 1985, 1988; Keating and Dagbusan, 1986). Algal feeding rates and other algal diets must be approved prior to use.

- 16. Aeration:
- 17. Dilution water:

- 18. Dilution factor:
- 19. Test duration:
- 20. End points:
- 21. Test acceptability:

22. Other test specifications in:

None.

Natural water (60um mesh filtered), reconstituted water, or up to 20% diluted mineral water (DMW).
Reconstituted and DMW waters should be prepared with Millipore Super Q° or equivalent. Addition of 5 ug/l selenium (2 ug/l selenium with natural water) and 1 ug/l vitamin B12 is recommended (Keating and Dagbusan, 1984; Keating, 1985 1988). Aerated prior to the test for a minimum of 24 hours, but not supersaturated.

0.3 or 0.5

Until 60% of control females have three broods, up to a maximum of eight days.

Survival and reproduction

80% or greater survival and an average of 15 or more young/surviving female in the controls. At least 60% of surviving females in the controls produced their third brood within eight days. No ephippa produced in the controls. The number of males in the controls and test concentrations should be minimal and not influence the determination of the NOEC and LOEC.

USEPA, 1989. Method 1002.0

SUMMARY OF TEST CONDITIONS FOR ALGAL (SELENASTRUM CAPRICORNUTUM) GROWTH TEST

1. Test Type:	Static, Non Renewal
2. Test Duration:	96 hours
3. Age of Test Organisms at Test Start:	4 to 7 days
4. Dilution Factor:	0.3 or 0.5
5. Number of Test Concentrations:	Minimum of 5 plus a control (A second control is optional when a dilution water other than the algal culture medium is used).
6. Number of Replicates per Each Concentration and Control:	4 (Minimum of 3)
7. Initial Cell Density per Replicate:	10,000 cells/ml
8. Test Chamber Size:	125 ml or 250 ml chamber recommended (covered)
9. Test Solution Volume:	50 ml or 100 ml recommended
10. Dilution Water:	Algal culture medium or filtered natural surface waters using a 0.45 um pore diameter filter, followed by addition of nutrient solutions (USEPA 1989, Method 1003, Table 1). The use of EDTA or other nutrient solutions is not recommended.
11. Reagent Water:	Carbon filtered distilled or deionized water which does not contain substances which are toxic to the test organism. A water purification system may be used to generate reagent water (ie. Millipore Super QR or equivalent).
12. Test Temperature:	25° ± 1° C
13. Photoperiod:	Continuous illumination
12	en e

14. Light Quality:

15. Light Intensity:

16. Shaking Rate:

17. Effects Measured:

18. Test Acceptability:

19. Other Test
Specifications in:

"Cool White" Fluorescent lighting

 $86+8.6 \text{ uE/m}^2/\text{s} (400+40\text{ft-c})$

100 cpm continuous or twice daily by hand

Growth (cell counts, chlorophyll content, fluorescence, absorbance, biomass)

The algae in the test solutions must be checked under a microscope to detect abnormalities in cell size or shape.

Algal growth determined daily

Algal density $\geq 2 \times 10^5$ cells/ml in the controls (without EDTA). Variability of controls should not exceed 20 percent.

USEPA, 1989. Method 1003.

SUMMARY OF TEST CONDITIONS FOR SHEEPSHEAD MINNOW (CYPRINODON VARIEGATUS) LARVAL SURVIVAL AND GROWTH TEST

Static Renewal 1. Test Type:

2. Test Duration: 7 days

3. Renewal of Test Solutions: Daily

Age of Test Organisms at Newly Hatched Larvae. (24 hrs Testing with organisms Test Start: up to 48 hrs old is permitted

if they are all within one age

group.

0.3 or 0.5 5. Dilution Factor:

6. Number of Test Minimum of 5 plus a control (a Concentrations: second reference water control

> is optional when a dilution water other than the culture water is used)

Number of Replicates per Minimum of 3 Each Concentration and

Control:

8. Number of Organisms per

Replicate:

Minimum of 10

Minimum of 600 mL chamber 9. Test Chamber Size:

(covered)

10. Test Solution Volume: Minimum of 500 mL/replicate

11. Loading Factor: Minimum 50 mL/larvae

12. Dilution Water: Natural sea water

hypersaline brine

13.	Salinity of Test Concentrations:	25 ppt +/- 2 ppt (varying not more than 2 ppt among replicate chambers each day)
14.	Adjustment of Salinity of Test Concentrations:	Hypersaline brine to 75% effluent. Acceptable artificial sea salts above 75% effluent.
15.	Test Temperature:	25 +/- 2°C
16.	Aeration:	None unless the Dissolved Oxygen falls below 60% saturation, then all chambers. Rate less than 100 bubbles/min
17.	Food Source:	24 hour post hatch <u>Artemia</u> nauplii. (Other supplements or variations approved prior to use.)
18.	Feeding Regime:	Days 0-2: feed once per day 0.1 g wet weight <u>Artemia</u> nauplii per replicate. Days 3-6: feed once per day 0.15 g wet weight <u>Artemia</u> nauplii per replicate.
19.	Photoperiod:	16 Light:8 Dark
20.	Effects Measured:	Survival and Growth
21.	Weighing/drying Procedures:	Immediately prepare for drying and weighing or preserve in formalin or ethanol to dry and weigh at later date.
22.	Test Acceptability:	80% survival in controls and an average dry weight of ≥ 0.60 mg (unpreserved larvae) or 0.50 mg (preserved larvae)

23. Other test specifications USEPA 1988, Method 1004 available in:

SUMMARY OF TEST CONDITIONS FOR INLAND SILVERSIDE (MENIDIA BERYLLINA) LARVAL SURVIVAL AND GROWTH TEST

Static Renewal 1. Test Type: 2. 7 days Test Duration: Renewal of Test Solutions: 3. Daily Age of Test Organisms at 7-11 days post hatch Larvae Test Start: Dilution Factor: 0.3 or 0.5 5. Minimum of 5 plus a control (a 6. Number of Test second reference water control Concentrations: is optional when a dilution water other than the culture water is used) Minimum of 3 Number of Replicates per Each Concentration and Control: Minimum of 10 8. Number of Organisms per Replicate: Test Chamber Size: Minimum of 600 mL chamber 9. (covered) 10. Test Solution Volume: Minimum of 500 mL/replicate 11. Loading Factor: Minimum 50 mL/larvae 12. Dilution Water: Natural sea water hypersaline brine

Salinity of Test

Concentrations:

13.

25 ppt +/- 2 ppt (varying not

more than 2 ppt among replicate chambers each day)

14. Adjustment of Salinity of Test Concentrations:

Hypersaline brine to 75% effluent. Acceptable artificial sea salts above 75% effluent.

15. Test Temperature: 25 +/- 2°C

16. Aeration:

None unless the Dissolved . Oxygen falls below 60% saturation, then all chambers. Rate less than 100 bubbles/min

17. Food Source:

24 hour post hatch Artemia nauplii. (Other supplements or variations approved prior to use.)

18. Feeding Regime:

Days 0-2: feed once per day 0.1 g wet weight Artemia nauplii per replicate.

Days 3-6: feed once per day 0.15 g wet weight Artemia nauplii per replicate.

19. Photoperiod: 16 Light:8 Dark

20. Effects Measured: Survival and Growth

Weighing/drying 21. Procedures:

Immediately prepare for drying and weighing or preserve in formalin or ethanol to dry and weigh at later date.

22. Test Acceptability:

80% survival in controls and an average dry weight of ≥ 0.50 mg (unpreserved larvae) or 0.43 mg (preserved larvae)

23. Other test specifications USEPA 1988, Method 1006 available in:

SUMMARY OF TEST CONDITIONS FOR MYSID (MYSIDOPSIS BAHIA) SURVIVAL, GROWTH, AND FECUNDITY TEST

1.	Test Type:	Static Renewal
2.	Test duration:	7 days
3.	Renewal of Test Solutions:	Daily
4.	Age of Test Organisms at Test Start:	7 days; 8 days maximum (all released within 24 hours from a single source).
5.	Dilution Factor:	0.3 or 0.5
6.	Number of Test Concentrations:	Minimum of 5 plus a control (a second control is optional when a dilution water other than the culture water is used).
7.	Number of Replicates per Each Concentration and Control:	Minimum of 5 recommended
8.	Number of Organisms per Replicate:	Minimum of 10 recommended
9.	Test Chamber Size:	Minimum of 500 ml recommended (covered)
10.	Test Solution Volume:	Minimum of 400 ml recommended
11.	Dilution Water:	Natural Sea Water or Hypersaline Brine
12.	Salinity of Test Concentrations:	25 ppt + 2 ppt (varying not more than 2 ppt among replicates each day)
13.	Adjustment of Salinity of Test Concentrations:	Hypersaline Brine to 75 percent effluent. Artificial sea salts acceptable above 75 percent effluent.
14.	Test Temperature:	260- 27°C recommended

15. Aeration:

None unless the Dissolved Oxygen falls below 60% saturation, then all chambers.

16. Food Source:

24 hour post hatch Artemia naupli (other supplements or variations should be approved prior to use).

17. Feeding Regime:

150 naupli per mysid
(approximately 0.1 ml of
concentrated naupli) - half
after test solution renewal and
half at 8 - 12 hours.

18. Photoperiod:

16 h light, 8 h dark

19. Light Intensity:

50-100 ft-c

20. Effects Measured:

Survival, Growth and Fecundity

21. Weighing/Drying Procedures:

Animals examined within 12 hours of test termination. Pieces of aluminum foil or small aluminum foil weighing boats less than 10 mg in weight.

22. Physical/Chemical Measurements
(In addition of those specified in the General Conditions Section):

Ammonia, Nitrite and Nitrate shall be measured in the controls at the test beginning.

23. Recommended Culture Water Specifications (Ward, 1989, 1989b):

Salinity = 25 ppt
Temperature = 25 degrees
pH = 7.8 - 8.2 SU
Dissolved Oxygen = 6.5 - 7.1 mg/l
Ammonia = \(\preceq 0.05 \) mg/l
Nitrite = \(\frac{7}{20}\) mg/l
Nitrate = \(\frac{7}{20}\) mg/l
Alkalinity = 45 - 120 mg/l

24. Test Acceptability:

≥80% control survival, an average weight of ≥0.2 mg per mysid in the controls and egg production by 50 percent of the control females.

25. Other Test
Specifications in:

USEPA, 1988. Method 1007.

SUMMARY OF TEST CONDITIONS FOR CHAMPIA PARVULA SEXUAL REPRODUCTION TEST

Static, non-renewal

2. Test duration: 2-day exposure to effluent, followed by 5- to 7-day recovery period for females only in control medium for cystocarp development 3. Test solution volume: 100 mL Dilution water: 4. 30 ppt salinity natural seawater, or a combination of 50% - 30 ppt salinity natural seawater and 50% - 30 ppt salinity artificial seawater as per USEPA (1988), method 1009. Dilution factor: 5. 0.3 or 0.56. Number of test At least 5 and a control, the concentration concentrations: of effluent used in this test is limited to a maximum of 50%. 7. Number of replicates per each concentration and control: 4 (minimum of 3) 5 female branch tips approximately 1cm in 8. Number of organisms per replicate: length and 1 male plant approximately 2cm in length (visibly producing spermatia).

9. Salinity: 30 ppt <u>+</u> 2 ppt

10. Temperature: 22 - 24°C

1.

Test type:

11. Photoperiod: 16 h light, 8 h dark

12. Light intensity: $100 \text{ uE/m}^2/\text{s}$ (500 ft-c)

13. Light source: Cool-white fluorescent lights

14. Test chamber: 200 mL polystyrene cups (covered), or 250 mL Erlenmeyer flasks (recommended)

15. Aeration: None during exposure period; chambers are either shaken at 100 rpm on a

rotary shaker or handswirled twice a day.

16. Effects measured: Significant reduction in the number of cystocarps formed in test concentrations compared to controls.

17. Test acceptability:

80% survival in the controls (generally there is no control mortality), controls shall average 10 cystocarps or more per plant, plants in the control and lower test concentrations shall not fragment so that individual plants cannot be identified.

18. Other test specifications in:

USEPA, 1988. Method 1009.

TERATOGENICITY ENDPOINTS

If for any reason the Department has concerns regarding the teratogenicity of a particular effluent to aquatic life, in addition to the methods contained in the Methods Specifications section, the following methods may be used:

Fathead Minnow (<u>Pimephales promelas</u>) Embryo-larval Survival and Teratogenicity Definitive Test, Method 1001.0. (USEPA 1989).

Sheepshead Minnow (<u>Cyprinodon variegatus</u>) Embryo-larval Survival and Teratogenicity Definitive Test, Method 1005. (USEPA 1988).

REFERENCES

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- 6. Keating, K., and B. Dagbusan. 1986. Diatoms in daphnid culture and bioassay. Envirn. Tox. Chem. 5:299-307.
- 7. USEPA. 1988. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. May 1988. 417 p.
- 8. USEPA. 1989. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA/600/4-89/001. February 1989.
- 9. Ward, S.H. 1989a. Requirements for a balanced medium in toxicological experiments using Mysidopsis bahia with special reference to calcium carbonate. Aquatic Toxicology and Hazard Assessment: 12th volume. ASTM STP 1027. U.M. Cowgill and L.R. Williams, Eds., American Society for Testing and Materials, Philadelphia, PA. (In press).
- 10. Ward, S.H. 1989b. Techniques to enhance laboratory culture of <u>Mysidopsis bahia</u> (Molenack). 118th Annual Symposium of the American Fisheries Society. September 9-15, 1988, Toronto, Ontario. (In press).

Background Information

- 1. Outfall(001) will discharge to the Peach Island Creek classified as SE2 waters.
- 2. Data from the September 19, 1988 Report "Remedial Investigation, SCP Carlstadt" prepared by Dames & Moore was used to determine the extent of contamination which may be present in outfall 001. The following information was extracted from the Report and used to characterize the contamination which may be present in outfall 001:
- 1. Organic and Inorganic Chemical Copmpounds detected at the SCP Site Table 2
- 2. Water Table Aquifer Samples Table 21 and 22.
- 3. Till Aquifer Samples Table 21 and 22
- 4. Surface Water Samples Table 23,24,25 and Figure 52,53,54,55.

This data may or may not be representative of the contamination in outfall 001 since the data available is from 1987. Only the information available, as listed above, was used to characterize this discharge and the instream background levels.

STATEMENT OF BASIS

Whole effluent toxicity limitation

Outfall 001

The water quality based acute and chronic toxicity limitations were calculated in accordance with N.J.A.C. 7:5-4.6(c)5 using a MA7CD10 flow of 0.03 cfs(USGS personal communication) and an effluent flow of 0.072 MGD reported on the August 2, 1989 memorandum from the Division of Hazardous Waste Management.

In accordance with the Departments "Interim Policy on Permittees Receiving Chronic Limits" (dated October 4, 1989), the more stringent of the two limitations (acute or chronic) calculated for the outfall, is selected as the toxicity limitation. Therefore, the chronic toxicity limitation of an NOEC $\geq 79\%$ is selected as the toxicity limitation for this discharge.

Multi-species testing requirements for chronic toxicity testing are imposed in accordance with N.J.A.C. 7:9-4.5 (f)1.i. and recommendatios in the Technical Support Document for Water Quality - based Toxics Control (USEPA 1985; EPA-440/4-85-032).

The initial increased testing frequencies are included to establish an adequate database for toxicity in order to determine if the discharge is in consistent compliance with the established effluent limitations, in accordance with the N.J.A.C. 7:14A-10.3(a)16. The requirement for cessation of discharge (should the disacharge not meet its toxicity limitation) is in accordance with N.J.A.C 7:14A-2.8(d) since new sources do not qualify for compliance schedules and with N.J.A.C. 7:14A-2.5(a)6 which states that "The permittee shall take corrective action including ceasing discharge to mitigate the effects of violating a NJPDES permit." Furthermore, the impact to the groundwater cleanup, caused by the temporary cessation of discharge to surface water, should be less severe than if the discharge to surface water was continued in violation of effluent limitations.

Chemical Specific Effluent Limitations

Outfall 001

Technology based limitations were considered based on the following documents:

- 1. Guidance for BAT-Equivalent Control of Selected Toxic Pollutants, James W. Patterson, Ph.D. (May 1981).
- 2. Organic Chemicals and Plastics and Synthetic Fibers
 Category Effluent Limitations Guidelines, Pretreatment
 Standards, and New Source Performance Standards; Final
 Rule, 40 CFR Parts 414 and 416 (November 5, 1987).
- 3. USEPA WERL Treatability Database.

Water Quality-Based Effluent Limitations (WQBEL) were calculated The procedure for determining Waste Load as follows. Allocation's (WLA's), calculating Long Term Averages (LTA's), and translating the LTA'S into permit limits are consistent with the EPA "Permit Writer's Guide to Water-Quality-Based Permitting for Toxic Pollutants" (EPA 440/4-87-005 July 1987) which is based on the EPA "Technical Support Document for Water Quality-Based Toxics Control" (EPA 440/4-85-032 September 1985). A reserve capacity is maintained pursuant to N.J.A.C. 7:9-4.6(c)4.i. when calculating WLA's. Assuming the discharge will be via a submerged pipe to ensure good mixing, site specific WLA's were calculated using the N.J. Surface Water Quality Criteria for saline water. A minimum average 7 consecutive day flow with a statistical recurrence interval of 10 years (MA7CD10) of 0.03 cfs was used, for the proposed discharge to Peach Island Creek. A steady state model assuming the pollutant behaves as a conservative substance was used to calculate the site specific WLA's. An effluent performance level (LTA) necessary to comply with the WLA is backcalculated. The most stringent LTA was used to calculate the Daily Maximum and Monthly Average effluent limitations.

Limitations are expressed in terms of both mass and concentration. In each case the proposed limitations are based on the more stringent of the WQBEL or technology based limitations.

The limitation for Petroleum Hydrocarbons is in accordance with the New Jersey Oil and Grease effluent limitations, N.J.A.C. 7:14A-14.1 et. seq.

The limitation for Total Organic Carbon is in accordance with the Wastewater Discharge Requirements, N.J.A.C. 7:9-5.5 and 7:9-5.8 for the Hackensack River basin.

The requirement for cessation of a discharge (should the discharge not meet the effluent limitations) is in accordance with N.J.A.C. 7:14A-2.8(d) since new sources do not qualify for compliance schedules and with N.J.A.C. 7:14A-2.5(a)6 which states that "The permittee shall take corrective action including ceasing discharge to mitigate the effects of violating a NJPDES permit." Furthermore, the impact to the SCP site, caused by the temporary cessation of discharge to surface water, should be less severe than if the discharge to surface water was continued in violation of effluent limitations.

Whole Effluent Toxicity Testing Requirements

Chronic Toxicity Testing

- 1. Test Species and Methodology
 - a. Chronic toxicity tests shall be conducted concurrently, with the split samples, using the following test species and test durations:
 - A choice of one of the following two fish species:
 Sheepshead minnow (Cyprinodon variegatus),
 7 day larval survival and reproduction test, or

Inland Silverside (Menidia beryllina), 7 day larval survival and reproduction test, and

2. Mysid shrimp (Mysidopsis bahia), 7 day survival, growth, and fecundity test.

Such testing will determine if appropriately selected effluent concentrations will affect the survival, growth and/or reproduction of the most sensitive to the discharge.

- b. Test results shall be expressed as an NOEC (No Observable Effect Concentration) and LOEC (Lowest Observable Effect Concentration). Compliance with the chronic limit shall be evaluated using the most sensitive endpoint measured by the test.
- c. Testing shall be in conformance with the guidelines contained in the "Interim Chronic Toxicity Testing Methodologies for Use in the NJPDES Permit Program, Version 1.0, February 1989" (attached). The laboratory performing the toxicity testing shall be within the existing acute toxicity testing laboratory certification program established under N.J.A.C. 7:18-6.

MONITORING AND REPORTING REQUIREMENTS

Monitoring Frequency for all Parameters

- 1. Chronic toxicity testing shall initially be conducted on representative effluent samples on a biweekly basis for two months. All other parameters shall be monitored at the frequencies specified in Table II. If the test results show that the effluent is consistently meeting the specified chronic toxicity limitation, the discharge may continue (provided it also meets any other specified limits). If at any time the effluent does not meet the specified chronic toxicity or chemical specific limitations, the discharge shall cease until it is determined that the effluent can consistently meet the specified limits.
- 2. Once it has been demonstrated that the effluent from the site can consistently meet the specified chronic toxicity limit, the discharge shall be monitored at a quarterly frequency using the most sensitive chronic species/test (as determined during the first two months of testing). If at any time the discharge from the site does not meet its specified effluent limitations, that discharge shall cease until it is determined that the effluent can again consistently meet the specified chronic toxicity and/or chemical specific limitations.

Testing Requirements

All analyses shall be performed in accordance with N.J.A.C. 7:14A-2.5(a)12.ii.

Reporting Requirements

- 1. The Bureau of Industrial Discharge Permits shall be notified one month prior to commencement of discharge of treated groundwater from the SCP Carlstadt site outfall DSN001.
- 2. All test results shall be summarized and reported monthly (starting from the first month in which the discharge occurs) on the Discharge Monitoring Reports (DMR's), a copy of which is attached.
- 3. All DMR's shall be submitted within 25 days of the start of the following month. Contact Surya Shah of the Bureau of Industrial Discharge Permits at 2-4860 for directions on the submittal of DMR's.
- 4. Chronic toxicity test results shall also be reported on the "NJPDES Biomonitoring Report Form Chronic Bioassays," (copies of which are provided to certified laboratories).

PERMIT EQUIVALENCY SLAGUARY TABLE I

OUTFALL 001

PARAMETER All values are in	UORST CASE INFLUENT DATA	UATI GUAI BASI LIN	LITY	TECHI BASEI LIMII	OLOGY		TEAET WININTH	EPA METHOD MANGER	PERMI EQUIV EFFLU LIMIT	ALENT
ug/l unless otherwise stated		DAY MAX	MON AVG	DAY MAX	NON AVG		(ug/l)		DAY MAX	NON AVG
CONVENTIONALS & NON-CO	WVENTIONALS									
Flow (GPD)	72,000	•	-	•	•		. •	•	Repor	t
TOC(mg/l)	•	•		40	- ((2)	•		40	•
TSS(mg/l)	•	•	•	50	- ((1)	•		50	•
pH(S.U.)	•	•	•	6.5	-8.5	(6)	•		6.5-8.	.5
Petroleum Hydro- carbons(mg/l)	•		•	15	10 ((3)	•		15	10
Cyanide, total	4,520	0.5	1.0	400	200	(4)	5.0	335.3	0.5	1.0
Chronic Toxicity	•	NOEC	<u>></u> 79%	-	-		•	-	Min.NOEC	≥ 79%
VOLATILE COMPOUNDS	•		•							
Benzene	7,270	•	•	134	57 ((5)	4.4	624	134	57
Chlorobenzene	6,560	•		380	142	(5)	6.0	624	380	142
Chloroethane	2,420	•	•	295	110	(5)	0.52	601	295	110
Chloroform	614,000	•	•	325	111	(5)	1.6	624	325	111
1,1 Dichloroethane	11,700	•	•	59	22 ((5)	4.7	624	59	22
1,2 Dichloroethane	473,000	,		574	180	(5)	2.8	624	574	180
1,1 Dichloroethylene	1,220	•	-	60	22	(5)	2.8	624	60	22
Ethylbenzene	3,900	-	-	380	142	(5)	7.2	624	380	142
Methylene Chloride	200,000	. •	•	170	36	(5)	2.8	624	170	36
1,1,2,2-Tetrachloro- ethane	7,350	•	•	50 .	· - ((7)	6.9	624	50	•
Tetrachloroethylene	24,500		•	164	52	(5)	4.1	624	164	52

PARAMETER	MORST CASE INFLUENT DATA	uat Gua Bas Lin	LITY ED	TECH BASE LINI		NINIPLIN DETECTION LEVEL	EPA METHOD MUMBER	PERMI EQUIV EFFLI LIMI	VALENT JENT
		DAY	MON	DAY MAX	MCM AVG	(ug/l)		DAY	MCN AVG
VOLATILE COMPOUNDS		*****					••••••		
Toluene	90,900	•	-	74	28 (5)	6.0	624	74	28
1,2-Trans-dichloro- ethylene	64,700	•	-	66	25 (5)	1.6	624	66	25
1,1,1-Trichloroethane	81,200	•	-	59	22 (5)	3.8	624	59	22
Trichloroethylene	161,000	•	•	69	26 (5)	1.9	624	69	26
Vinyl Chloride	7,290	•	•	172	97 (5)	0.18	601	172	97
Methyl Ethyl Ketone 2	,000,000	•	•	2000	- (7)	-	-	2000	•
Xylenes, total	35,600	•	•	50	- (7)	-	-	50	-
ACID COMPOUNDS									·.
2-Chlorophenol	170	•	•	10	- (7)	3.3	625	10	-
2,4-Dichlorophenol	1,090	•	.	100	- (7)	2.7	625	100	•
2,4 Dimethylphenol	736	•	•	47	19 (5)	2.7	625	47	19
2-Nitrophenol	4	•	-	231	- 65 (5)	3.6	625	231	65
Phenol	17,100	•	-	47	19 (5)	1.5	625	47	19
BASE NEUTRAL COMPOUNDS									
Acenaphthene	40	•	-	47	19 (5)	1.9	625	47	19
Acenaphthylene	73	•	-	47	19 (5)	3.5	625	47	19
Anthracene	126	-	-	47	19 (5)	1.9	625	47	19
Benzo(a)pyrene	90	-	-	48	20 (5)	2.5	625	48	20
Benzo(b)fluoranthene	141	•	•	•	•	4.8	625		trolled with
bis(2-Chloroethyl)ethe	r 1,390	•	-	200	- (7)	5.7	625	200	zo(a)pyrene -
bis(2-Ethyl hexyl)- — phthalate	e 654 ·	•	-	258	95 (5)	2.5	625	258	^95
Butyl Benzyl phthalate	10.4	•	•	30	- (8)	2.5	625	30	•

003024

PARAMETER	WORST CASE INFLUENT DATA	BAS	LITY	TECH BASE LINI		NINIPLM DETECTION	EPA METHOD MUMBER	PERMIT EQUIVALE EFFLUENT LIMIT	NT
		DAY MAX	MON AVG	DAY MAX	MON AVG	(ug/l)		DAY NO VA XAN	-
BASE NEUTRAL COMPOUNDS									
2-Chloronaphthalene	18.9	•	•	57	- (8)	1.9	625	57 -	
Chryşene	87	-	-	47	19 (5)	2.5	625	47 1	9
1,2-Dichlorobenzene	192	-	-	794	196 (5)	1.9	625	794 19	6
Diethyl phthalate	416	-	-	113	46 (5)	22.0	625	113 4	6
Dimethyl phthalate	316	•	-	47	19 (5)	1.6	625	47 1	9
Di-n-butyl phthalate	318	•	•	43	20 (5)	2.5	625	43 2	0
Fluoranthene	266	•	-	54	22 (5)	2.2	625	54 Z	2
Fluorene	133	•	•	47	19 (5)	1.9	625	47 1	9
Indeno(1,2,3-c,d)pyrene	60	•	•	24	- (7)	3.7	625	24 -	
Isophorone	8,450	-	-	85	- (7)	2.2	625	85 -	
Naphthalene	1,220	-	•	47	19 (5)	1.6	625	47 1	9
Nitrobenzene	57,900	-	•	6402	2237 (5)	1.9	625	6402 223	7
Phenanthrene	620	•	• .	47	19 (5)	5.4	625	47 1	9
Pyrene	228	•	•	48	20 (5)	1.9	625	48 2	:0
PESTICIDES & PCBs			٠						
Beta-BHC	0.6	•	•	0.006	- (7)	0.006	608	0.006	• *
4,4' -DDT	1.7	0.0008	0.0004	4 -	•	0.012	608	0.008 0.00	004
4,4' -DDE	.59	•	•	•	•	0.004	608	Controlled	with DDT
Endosulfan I	.3	0.0072	0.0036	5 -	•	0.014	608	0.0072 0.00	36
Endrin	.7	0.002	0.001	•	•	0.006	608	0.002 0.00)1
Endrin Aldehyde	15.0	•	• ,	. • •	•	0.023	608	Controlled	with Endri
PC8-1's	17	0.025	0.012	•	•	•	608	0.025 0.01	12

PARAMETER	UORST CASE INFLUENT DATA	CASE QUALITY INFLUENT BASED		BASE	TECHNOLOGY BASED LIMITS		MINIMUM EPA DETECTION METHOD LEVEL MANBER		PERMIT EQUIVALENT EFFLUENT LIMIT	
		DAY	MON AVG	DAY NAX	MON AVG		(ug/l)		DAY MAX	MON AVG
METALS							·			
Arsenic	1,600	62	31	400	200 ((4)	1.0	206.2	62	31
Beryllium	1.3	•.	•	3	- ((8)	0.2	210.2	3	•
Cadmium	•	16	8	200	100 ((4)	0.1	213.2	16	8
Chromium, total	420	•	-	1000	500 ((4)	1.0	218.2	1000	500
Chromium, Hexavalent	-	-	-	100	50 ((4)	5.0	218.5	100	50
Copper, total	60	ND	ND	800	400 ((4)	1.0	220.2	MD	MD
Lead, total	-	10	5	300	150 ((4)	1.0	239.2	. 10	5
Mercury	0.21	MD	ND	6	3 ((4)	0.2	245.1	MD	MD
Nickel	150	ND	ND	1500	750 ((4)	1.0	249.2	MD	ND
Silver	110	2.46	1.23	200	100 ((4)	0.2	272.2	2.46	1.23
Zinc	690	MD	ND	1000	500 ((4)	0.05	289.2	ND	ND

⁽¹⁾ Based on USEPA Effluent Limitations Guidelines for stormwater discharges.

⁽²⁾ Based on minimum requirements for treatment of wastewater, N.J.A.C. 7:9-5.5 and 7:9-5.8.

⁽³⁾ Based on Oil and Grease Effluent Limitations N.J.A.C. 7:14A-14.1 et seq.

⁽⁴⁾ Based on "Guidance for BAT-Equivalent Control of Selected Toxic Pollutants", a report prepared by James W. Patterson, Ph. D., for USEPA, May 1981.

⁽⁵⁾ Based on final USEPA Effluent Guidelines for the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) point source category for discharges that do not use end-of-pipe biological treatment.

⁽⁶⁾ Based on HMDC District Zoning Regulations N.J.A.C. 19:4-6.14 (g).

⁽⁷⁾ BPJ based on WERL treatability database.

⁽⁸⁾ BPJ set at 3 times the highest observed influent data based on low levels observed.

SCP CARLSTADT - OUTFALL 001

D	I	S	C	Ł	A	R	G	E	
									_

PARAMETER	PERMIT EQUI		DISCHARGE COMPLIANCE LEVEL (1)	MONITORING REQUIREMENTS			
All values are in ug/1 unless otherwise stated	Monthly Average	Daily Maximum		FREQUENCY	SAMPLE TYPE		
CONVENTIONALS & NON-CO	NVENTIONALS						
Flow (GPD)	NL	NL	N/A	Continuous			
TOC(mg/l)	-	40	N/A	Weekly	Composite		
TSS(mg/l)	•	50	N/A	Monthly	Composite		
pH(S.U.)	6.5 Min.	8.5	N/A	Weekly	Grab		
Petroleum Hydro- carbons(mg/l)	10	15 (2)	N/A	Weekly	Grab		
Cyanide, total (lb/d)	0.5(.0003)	1.0(.0006)	5.0	Weekly	Grab		
Chronic Toxicity	NOEC ≥ 79%	N/A		See Pages	3 and 4 of 13		
VOLATILE COMPOUNDS			•	,			
Benzene	57	134	N/A	2/month	Grab		
Chlorobenzene	142	380	N/A	2/month	Grab		
Chloroethane	110	295	N/A	2/month	Grab		
Chloroform	111	325	n/a	2/month	Grab		
1,1 Dichloroethane	22	59	N/A	2/month	Grab		
1,2 Dichloroethane	180	574	n/A	2/month	Grab		
1,1 Dichloroethylene	22	60	N/A	2/month	Grab		
Ethylbenzene	142	380	N/A	2/month	Grab		
Methylene Chloride	36	170	n/A	2/month	Grab		
1,1,2,2-Tetrachloro- ethane	NL	50	n/a	2/month	Grab		
Tetrachloroethylene	52	164	N/A	2/month	Grab		

DISCHARGE COMPLIANCE

	PERMIT EQ		COMPLIANCE	MONTHOPING PROTTER PROTEIN				
PARAMETER All values are in	EFFLUENT	LIMITATIONS	LEVEL (1)	MONITORING REQUIREMENT				
ug/l unless otherwise stated	Monthly Average	Daily Maximum		FREQUENCY	SAMPLE TYPE			
VOLATILE COMPOUNDS								
Toluene	28	74	N/A	2/month	Grab			
1,2-Trans-dichloro- ethylene	25	66	n/a	2/month	Grab			
1,1,1-Trichloroethane	22	59	N/A	2/month	Grab			
Trichloroethylene	26	69	N/A	2/month	Grab			
Vinyl Chloride	97	172	N/A	2/month	Grab			
Methyl Ethyl Ketone	NL	2000	N/A	2/month	Grab			
Xylenes, total	NL	50	N/A	2/month	Grab			
ACID COMPOUNDS								
2-Chlorophenol	NL	10	N/A	2/month	Grab			
2,4-Dichlorophenol	NL	100	N/A	2/month	Grab			
2,4 Dimethylphenol	19	47	N/A	2/month	Grab			
2-Nitrophenol	65	231	N/A	2/month	Grab			
Phenol	19	47	n/a	2/month	Grab			
BASE NEUTRAL COMPOUNDS								
Acenaphthene	19	47	N/A	2/month	Grab			
Acenaphthylene	19	47	N/A	2/month	Garb			
Anthracene	19	47	N/A	2/month	Grab			
Benzo(a)pyrene	20	48	N/A	2/month	Grab			
bis(2-Chloroethyl)ether	NL	200	N/A	2/month	Grab			
bis(2-Ethyl hexyl)- phthalate	95	258	N/A	2/month	Grab			
Butyl Benzyl phthalate	NL	30	N/A	2/month	Grab			

DISCHARGE COMPLIANCE

	PERMIT EQ		COMPLIANCE	MONT MOD THA			
PARAMETER All values are in	BFFLUBRT .	<u>LINITATIONS</u>	LEVEL (1)	MONITORING	REQUIREMENTS		
ug/l unless otherwise stated	Monthly Average	Daily Maximum		FREQUENCY	SAMPLE TYPE		
BASE NEUTRAL COMPOUNDS			·		·		
2-Chloronaphthalene	NL	57	N/A	2/month	Grab		
Chrysene	19	47	N/A	2/month	Grab		
1,2-Dichlorobenzene	196	794	N/A	2/month	Grab		
Diethyl phthalate	46	113	N/A	2/month	Grab		
Dimethyl phthalate	19	47	n/A	2/month	Grab		
Di-n-butyl phthalate	20	43	N/A	2/month	Grab		
Fluoranthene	22	54	N/A	2/month	Grab		
Fluorene	19	47	n/A	2/month	Grab		
Indeno(1,2,3-c,d)pyrene	NL	24	n/A	2/month	Grab		
Isophorone	NL	85	n/A	2/month	Grab		
Naphthalene	19	47	N/A	2/month	Grab		
Nitrobenzene	2237	6402	N/A	2/month	Grab		
Phenanthrene	19	47	n/A	2/month	Grab		
Pyrene	20	48	N/A	2/month	Grab		
DECENTATIONS & DODA			•				
PESTICIDES & PCBs	•						
Beta-BHC	NL	0.006	0.006	2/month	Grab		
4,4' -DDT (lb/d) 0.00	004(2.4E-7)	0.0008(4.8E-7)	0.012	Weekly	Grab		
Endosulfan I (lb/d)0.00	36(2.1E-6)	0.0072(4.2E-6)	0.014	Weekly	Grab		
Endrin (lb/d) 0.0	001(6.0E-7)	0.002(1.2E-6)	0.006	Weekly	Grab		
PCB's (1b/d) 0.0)12(7.2E-6)	0.025(1.5E-5)	-	Weekly	Grab		

	PERMIT EQ	JIVALENT	COMPLIANCE		
PARAMETER	EPPLUENT 1	LIMITATIONS	LEVEL (1)	MONITORING	REQUIREMENTS
All values are in		•			
ug/l unless	Monthly	Daily		,	
otherwise stated	Average	Maximum		FREQUENCY	SAMPLE TYPE

DISCHARGE

ornerwise stated	Average	MAXIBUM		FREQUENCI	SAMPLE TYPE
METALS					
Arsenic (lb/d)	. 31(.0186)	62(.037)	N/A	Weekly	Composite
Beryllium	NL	3	N/A	Weekly	Composite
Cadmium (lb/d)	8(.0048)	16(.0096)	N/A	Weekly	Composite
Chromium, total	500	1000	N/A	2/month	Composite
Chromium, Hexavalent	50	100	N/A	2/month	Composite
Copper, total	ND	ND	1.0	Weekly	Composite
Lead, total (1b/d)	5(.003)	10(.006)	N/A	Weekly	Composite
Mercury	ND	ND	0.2	Weekly	Composite
Nickel	ND	ND	1.0	Weekly	Composite
Silver (lb/d)	1.23(.0007)	2.46(.0015)	N/A	Weekly	Composite
Zinc	ND	ND	0.05	Weekly	Composite

N/A - not applicable

NL - no limit, but monitoring and reporting required

NOEC - No Observable Efects Concentration

ND - nondetectible by the most sensitive analytical method available

⁽¹⁾ Where specified, the Discharge Compliance Level (DCL) shall be used for purposes of determining discharge compliance. When the average and maximum effluent limitations are less than the DCL, the discharge must be less than or equal to the DCL to be considered in compliance with both limitations. When only the average limitation is less than the DCL, the discharge will be considered in compliance with both limitations if it is in compliance with the maximum effluent limitation.

⁽²⁾ And no visible sheen.

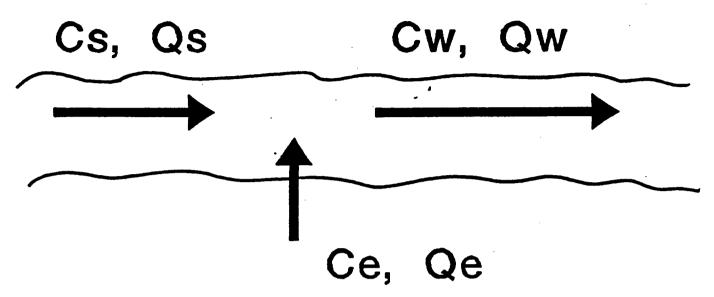
EFFLUENT LIMITS WORKSHEET

Facility: SCP Courlstadt NJ00 Receiving Stream: Peach Island Creek MA7CD10: 0.03 cfs = 0.01935 MGD

		WATER (QUALITY	BASED CF	ITERIA	Back-			ALLOCATI		LONG			(LTA)	WQB L	
PARAMETERS	Infl. Value	NJWQS	Acute	Chronic WQC	Human Health	ground Values	njwqs WLA	Acute WLA	Chronic WLA	H.H. WLA	NJWQS LTA	Acute LTA	Chronic LTA	H.H. LTA	Monthly Average	Daily Maximum
Assenic	-	-	69	36	1	0	1	70	36.5	1	1	23.73	19.84	_	30.79	61.78
Cadmium	_	1	43	9.3		0	1	43.3	9.37	1	1	14.69	5.09		7.89	15.84
Chromium +6	-	1	1100	50	1	-	•	880	40	1	6	298	21.72	1	33.71	67.64
Copper	60	1	2.9	-	1	100	•	40	-	-	1	40	-	-	ND	ND
Lead		1	140	5.6	•	0	1	141./	5.64	-	,	47.8	3.06	-	4.75	9.53
Mezcuzy	0.21	1	2.1	0.025	1	4.8	1	۷0	۷٥	•	1	40	40		ND	ND
Nickel	150	1	75	8.3	(57	•	75.6	(0	1	1	25.63	40	-	ND	ND
Selenium	-	1	300	7/	•	0	8	302.3	71.6	1	ſ	102.5	38.88	-	60.34	121.1
Zinc	690	1	95	86	1	370	1	40	40	-	ı	40	(0	-	2A	NA AN
Silvez	110	1	2.3	-	1	0	•	2.32	•	•	•	0.79	•	•	1.23	2.46
Cyanide total	-	-			•	0	-	1. 015	1			0.344	1		0.534	1.071
4,4 DDT	1.7	0.001	-		-	0	.001	_		_	.00027	-	-	-	.0004	.000 8
Endrin	0.7	0.0023	-	_	-	0	.0023	1	-	1	.0006	•	-	-	.00093	.0018
PCBS	-	0.03	-	_	-	0	103	•	1	-	.∞8	•	1	-	.012	.025
Endosulfan	•3	0.0087	_	-	_	0	.0087	,	7	•	.0023	1	1	-	.0036	.007
· · · · · · · · · · · · · · · · · · ·																

COMMENTS:	 	 ·····	

SIMPLE MASS BALANCE



Where:

Cs = Background Stream Concentration

Qs = Upstream streamflow

Qw = 7-day, 10-year Low Flow

Cw = Surface Water Quality Criteria

Qe = Effluent Flow Rate

Ce = Effluent Concentration

SIMPLE MASS BALANCE

Mass of Pollutant Upstream + Mass of Pollutant in Effluent

Mass of Pollutant Downstream - Pollutant Reserve

Mass Effluent - Mass Downstream-Mass Upstream-Reserve

Mass in effluent (lb/day) - Wasteload Allocation (WLA)

Mass downstream (lb/day) = 8.34 + Qw(mgd) + Cw(mg/l)

Mass upstream (lb/day) = 8.34 + Qs(mgd) + Cs(mg/l)

Reserve (lb/day) = 0.2 * 8.34 * Qw(mgd) * Cw(mg/l)

For Qw, Qs in cubic feet per second and Cw, Cs in ug/l:
WLA (lbs/day) = 0.00539 * (0.8*Qw*Cw - Qs*Cs)

SCP Carlstadt

Water Quality Based Effluent Limits

-> Long Term -> Effluent Average Limit Waste Load Allocation CLTA) (WLA)

WLA (164day) = 8.34 (QWCW - QsCs -0.2QWCW) = 8.34 (0.80 m Cm - Qs Cs)

> where Qu = Qs+Qe Qe, Qs and Qw are in MGD, and Ce, Cs and Cw are in mg/l.

For Discharge to Peach Island Creek which is saline water with a stream classification of SE2 waters,

> Qs = 0.01935 MGD Qe = 0.072 MGD

ARSENIC "Chronic"

WLA (165/day) = 8.34 (.8 x 0.09135 x 36 - .01935x)

= 0.0219415

WLA CM/1) = 0.0219415 X1000 8.34 X.072

003034

= 36.5

WLA CIBIday) = 8.34(.8 x 69 x .09135) - 101935x01

= 0.0420548

WLA (Mg/L) = 0.0420548 x 1000

= 70.03

Since chronic and acuty exitting are available, I have to calculate LTA for both and choose the most stringent LTA of both and use that to ealculate Effluent Limitations.

Chronic LTA = chronic WLA x 0.543

= 36.5 x · 543

= 19.84 mg/l

Acute LTA = Acute WLA X 0. 339

= 70 x · 339

= 23.73 eg/l

Hence Chronic LTA is used to derive Effluent Limit.

Monthly Average = 19.84 x 1.552 (multiplie)

= 30.79 or say 31 mg/l

Daily Maximum = 19.84 x 3.114 (multiplier)

-61.78 or say 62 mg/s

003035

4-4-DDT

 $WLA CIb/day) = \frac{8.34(.8 \times \frac{.001}{1000} \times .09135 - .01935 \times 0)}{= .00000006 \ lb/day}$

WLA (119/1) - . 0000006 x1000

- .001

For NJWQS, multiplier to calculate LTA is 0.266.

Therefore LTA = WLAX 0.266 = .001 x.266 = .00027

Efelvent Limit:

= 0.0007 X1.552

Daily Maximum = 0.00027 x 3.114 = 0.0008

PERMITTEE NAME ADDRESS (Include Facility Name/Location of different) YAME ADDRESS			NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR) (2-16) (2-16) (001							Form Approved OMB No. 2040-0004 Expires 3-31-88		
TODRESS			PERM	TNUMBER		TARGE NUMBER				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
<u> </u>			•	MONI	TORING PERIC	OD						
ACILITY .OCATION		·	FROM YEAR	MO D	AY TO YEAR	MO DAY						
		· — — — — —		(22-23) (24-			IOTE: Read instr	uctions before	comp	leting this	s form.	
PARAMETER		(3 Card Only) QUA (46-33)	NTITY OR LOADIN(54-61)	·G	(4 Card Only) (38-45)	QUALITY OR CONC (46-33)	CENTRATION (54-61)		110.	REQUENCY	SAMPLE TYPE	
(32-37)		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	62-63)	(84-68)	(69.70)	
Flow	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT	Report	Report	WCD	MA	N/A	NYA			Y,	wars.	
Toc	SAMPLE MEASUREMENT					·						
	PENMIT PEQUIREMENT	1474	作的作		P/A	N/A	40	mg/l		1/2	Comp.	
TSS	SAMPLE MEASUREMENT		: ,		·							
, 22	ALCOURE MAINT	77/87	NO EXA		PIA	PA/A	350	mg/l		130	Comp.	
L	SAMPLE MEASUREMENT	•	· · · · · · · · · · · · · · · · · · ·			7					.	
ЬH	PERMIT REQUIREMENT	S PAR			6.5	N/A	8.5	s.u.		17	Grab	
Petroleum	SAMPLE MEASUREMENT											
Petroleum Hydrocanbon		FAF7AN			S PA	716	iš-	wyl		<i>Y</i> ₂	Grab	
Cranide, total	SAMPLE MEASUREMENT							- Anala	5 & 1 S COLO 1			
Efflaent	PERMIT AEQUINEMENT			,	P/A	Report	Tio	ngl		1/2	6nd	
Cyanide, total	SAMPLE MEASUREMENT			18/1				esti				
See Comment Below	PERMIT REQUIREMENT	0.0003	810001	10/day	N/A	0.5	7.0	771		1/7	6mh	
NAME/TITLE PRINCIPAL EXECUTIVE	AND A	FY UNDER PENALTY O 4 FAMILIAR WITH THE I 1NOUIRY OF THOSE	NFORMATION SUBMITTE	O HEREIN. AN	EXAMINED NO BASED	-		TELEPHONE		DA	TE	
00	OBTAIN! IS TRU! NIFICAN	ING THE INFORMATION E. ACCURATE AND COI IT PENALTIES FOR SI	I. I BELIEVE THE SU MPLETE I AM AWARE UBMITTING FALSE INF	BMITTED INFO THAT THERE ORMATION, II	ORMATION ARE SIGNICLUDING			1				
C) TYPED OR PRINTED)\$8181LITY OF FINE ANI ; \$1319. IPenalties and maximum improximent of	er these statutes may in	clude fines up	to \$10,000	URE OF PRINCIPAL CER OR AUTHORIZE	1-1-1		R 1	EAR M	O DAY	
This parameter is	for tepor	ference all attachments	ises only a	nd wil	11 not be	wed to de				mplic	ency.	

EPA Form 3320-1 (Rev. 10-79) PREVIOUS EDITION TO BE USED UNTIL SUPPLY IS EXHAUSTED.

cility Name/Location if differenti	mulsi-ac	<u> </u>	national Feb.	ARGE MO	NITORING REP	ORT IDMRI (17-19)				Porm Appro OMB No. 2 Expires 3-3	040-0004
			PERM	IT NUMBER	<u> </u>	CHARGE NUMBER					
CILITY		. 	-	MONI	TORING PERI	OD					
CATION			PROM YEAR	MO D	TO VEAR	MO DAY				. *	
				(22-23) (24-	كالتراجي والمنطقة المنات والمنات والمن		IOTE: Read instru	ections before	e com	pleting thi	s form.
PARAMETER		(3 Card Only) QU (46-53)	ANTITY OR LOADIN (\$4-61)	i g	(4 Card Only) (38-45)	QUALITY OR CON	(54-61)		NO.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
(32-37)		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MUMIXAM	UNITS	(62-63)	(85-F9)	(69-70)
Ω.	SAMPLE MEASUREMENT							110.1			
Benzene	PERMIT REQUIREMENT		and the same			57	134	Mg/g		1/5	Grab
Shbrobenzene	SAMPLE MEASUREMENT								7.13	·	
	PERMIT A	7 7 7 7 7 7	Meach.			M 43.	380	49/1		1/13	Grab
hloroethane	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT		11,55			Filb.	295	ور وبد		1/5	Grab
Chloroform	SAMPLE MEASUREMENT	77					·	3 100 10		SUSS	
	PERMIT				3.73	Mark.	:325	اروس		1/5	Great
41 Dichloro-	SAMPLE MEASUREMENT							40/0		884 2 7 3	
ethane	BEGRIERMENT	1 / 1	Alace Co.	-		W 12	374	978		1/5	Grap
1,2 Dichloro-	SAMPLE MEASUREMENT							وروبد	0.00		
etherna	PERMIT ANGUINEMENT				77.79	12189:	574			1/15	Groub
1, 1 Dichloro-	SAMPLE MEASUREMENT							Jeng/2			
@ ethylene	REQUIREMENT					1.2.	68			1/5	Grab
AMESTITLE PRINCIPAL EXECUTIVE		M FAMILIAR WITH THE	OF LAW THAT I HAVE INFORMATION SUBMITT INDIVIDUALS IMMEDIAT	ED HEREIN. AL	NO BASED		-	TELEPHON	E	DA	TE
038	OSTAIN IS TRU NIFICAL THE PI	ING THE INFORMATIONS, ACCURATE AND CONTROL OF PENALTIES FOR 10 OSSIBILITY OF FINE AF	IN, I BELIEVE THE SL OMPLETE. I AM AWARE BUBMITTING FALBE INI ND IMPRISONMENT SEC	JBMITTED INFO THAT THERE FORMATION, II 18 U.S.C. 1	ORMATION ARE SIG NCLUDING	TURE OF PRINCIPAL	EXECUTIVE	ı			
TYPED OR PRINTED	and or	C \$1319. Proeller un maximum impropemment c	der these statutes may so of between 6 months and 5	erlude finen up vearn.i	(4. \$107,000)	ICER OR AUTHORIZ	7.8		ER	YEAR M	O DAY
MMENT AND EXPLANATION OF AN	Y VIOLATIONS (R	eference all uttachmen	ts here)								

INITTEE NAME (ADDRESS (Include lity Name/Location if different) SCP Constact			NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPUES) DISCHARGE MONITORING REPORT (DMR) (2-16) (17-19) PERMIT NUMBER DISCHARGE NUMBER						Form Approved OMB No. 2040-0004 Expires 3-31-88			
CATION			FROM YEAR	MONI [*] MO DA	70	MO DAY	NOTE: Read instri	uctions befo	re com	noletina thi	s form	
PARAMETER		(<i>J Card Only</i>) QU/ (46-53)	ANTITY OR LOADING		(4 Card Only) (38-45)	QUALITY OR CON (46-53)			1	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
(32-37)		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	(62-63)		(69-70)	
Ethylbenzene	SAMPLE MEASUREMENT		**************************************					-ug/g				
1.125ALSTANE	PERMIT REQUIREMENT		411			142	380	- 3/1		1/5	Greb	
Methylene Chloride	SAMPLE MEASUREMENT							ug/g				
	PERMIT 25		46.5		31. 4.19	7.36	170	7/3		1/5	Grap	
1,1,2,2-Tetrachlore	SAMPLE MEASUREMENT											
ethane	PERKIY REQUIREMENT	* 1977 340	1000			Report	5.50	14/1		1/5	Grub	
Tetrachlum-	SAMPLE MEASUREMENT						. :					
ethylene	PENNIT REQUIREMENT	1 1 1 1 1 1 1	7.2			1.5Z	164	49/2		1/15	Greeb	
Toluene	SAMPLE MEABUREMENT											
· · · · · · · · · · · · · · · · · · ·	REQUIREMENT					148	ブチ	119/R		1/5	Grab	
1,2-Trans-	SAMPLE MEASUREMENT							140 /0				
Dichloroethylene	PROUNEMENT				43 × 13	725	. 66	45/1		1/5	Grub	
1.1.1 Trichloro-	SAMPLE MEASUREMENT							49/		,		
ethane	PERMIT . REQUIREMENT					72	59	0/1		坊	Grab	
AME/TITLE PRINCIPAL EXECUTIVE	AND AN	M FAMILIAR WITH THE	P LAW THAT I HAVE P INFORMATION SUBMITTE INDIVIDUALS IMMEDIATE	D HEREIN, AN	D BASED BLE FOR		-	TELEPHON	E	DA	TE	
.0 .03	IS TRU MFICAN THE PC	IE, ACCURATE AND CO IT PENALTIES FOR S DSBIBILITY OF FINE AN	Y, I BELIEVE THE SUE MPLETE I AM AWARE I UBMITTING FALSE INFO D IMPRISONMENT SEE	THAT THERE ORMATION, IN 18 U.S.C. \$ 1:	ARE SIG-	TURE OF PRINCIPA	L EXECUTIVE					
TYPED OR PRINTED	and nr s	mazimum improvement o	ire these statutes may inc thetween 6 minths and 5 ye	rlude fines up rers.i	(n. \$10,iKK)	ICER OF AUTHORIZ	7.8		ER	YEAR M	O DAY	
MMÉNT AND EXPLANATION OF ANY	VIOLATIONS (RE	rjerence au auacnment	s nerej									

PERMITTEE NAME/ADDRESS (Include facility Name/Location if different) SC		Stadt_	DISCH	UTANT DISCHAR ARGE MONIT (2-16)	DRING RE	PORT (DMR) (17-19)			Form Appro OMB No. 2 Expires 3-3	2040-0004
			PERM	IT NUMBER		ISCHARGE NUMBER				
ACILITY .OCATION			PROM	MONITOF	TO YEAR	MO DAY				
PARAMETER		(3 Card Only) QU (46-53)	/20-21) ANTITY OR LOADIN (54-61)	(22-23) (24-25) G (4 C	(26-27) Card Only) (38-45)		NOTE: Read instru CENTRATION (34-61)	NO	FREQUENCY	SAMPLE
(32-37)		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS (62-6	ANALYSIS	(69-70)
Trichloro- ethylene	SAMPLE MEASUREMENT PERMIT REQUIREMENT		al agency.			" " 26 ·	- 69 	49/1	1/15	Grab
Vinylchloride	BAMPLE MEASUREMENT PERMIT S REQUIREMENT			7	4	3 9 3	りラム	119/1	坊	Grab
Methyl Ethyl Ketone	DAMPLE MEASUREMENT PERMIT REQUIREMENT	**********				Report	2000	113/2	% 5	Grab
Xylenes, total	BAMPLE MEASUREMENT PERMIT REQUIREMENT	Parase		-		Leport	** 5°0	119/1	1/5	Grab
2-Chlorophenol					* * **	. Keport	". 18 · · ·	43/1	1/5	Grah
2,4 Dichloro- Phenol	SAMPLE MEASUREMENT PERMIT REQUIREMENT	rs en		.05	a w.m	. Kejort	150	49/1	1/5	Grab
2,4Dimethyl phenol	SAMPLE MEASUREMENT PERMIT S REQUIREMENT					714	7.2	esse	4	Grab
NAMESTITLE PRINCIPAL EXECUTIVE	OFFICER CERTI	TY UNDER PENALTY C	F LAW THAT I HAVE P	ERSONALLY EXAMI	4€D			TELEPHONE	PJ	TE
CO TYPED OR PRINTED	ON MY OBTAINS IS TRUS MIFICAN THE PO 33 USC	INQUIRY OF THOSE NG THE INFORMATION T. ACCURATE AND CO T. PENALTIES FOR 8 SSIBILITY OF FINE AN 181319. IProalling and	INFORMATION SUBMITTE N. I BELIEVE THE SUE MPLETE. I AM AWARE 1 UBMITTING PALSE INFO D IMPRISONMENT SEE For their aladities may interest to the submitting in the submitting in the submitting in the submitted in	LY RESPONSIBLE F SMITTED INFORMATI FMAT THERE ARE S DRMATION. INCLUD 18 U.S.C. \$ 1001 A Finds Fines on to \$10	ION BIG ING AND JURI SIGN	ATURE OF PRINCIPAL		.1	,	
COMMENT AND EXPLANATION OF ANY			· ·) OF	FICER OR AUTHORIZ	ED AGENT GOD		YEAR M	O DAY
	•									

ERMITTEE NAME ADDRESS (Include acility Name/Location if different) SC	staalt	NATIONAL POLL DISCH/		Form Approved OMB No. 2040-0004 Expires 3-31-88							
ACILITY			FROM VEAR (20-21)	MONI 1 MO DA (22-23) (24-	το	MO DAY	OTE: Read ins	tructions befo	re com	pleting thi	s form.`
PARAMETER		(3 Card Only) QU/ (46-53)	ANTITY OR LOADIN (54-61)	o .	(4 Card Only) (38-45)	QUALITY OR CONC (46-33)	ENTRATION (54-61)		NO.	FREQUENCY	SAMPLE TYPE
(32-37)		AVERAGE	MAXIMUM	UNITE	MINIMUM	AVERAGE	MAXIMUM	UNITS	(62-63)	(64-68)	(69-70)
2-Nitrophenol	SAMPLE MEASUREMENT PERMIT REQUIREMENT		Section 1			7 65		- 119/e		14-	
	SAMPLE					,,90	-51	7/4		115	Greb
Phenol	MEASUREMENT PERMIT REQUIREMENT					19	47	- reg/x		1/15	Grab
Acenaphthene	SAMPLE MEASUREMENT							49/0			
	REQUIREMENT					177	47 .			1/15	Grab
Acenaphthylene	SAMPLE MEASUREMENT		5 · · · · · · · · · · · · · · · · · · ·					49/2	8 3835		
	REQUIREMENT					11.19.	+7			1/15	Grab
Anthracene	SAMPLE MEASUREMENT PERMIT REQUIREMENT					214 %	4.7	49/2		145	Greb
Benzolas.	SAMPLE MEASUREMENT							49/2	W. S. S. C. S. S.		·
Benzolas Przene	ARGUINEMENT	jake.			, a.e. (4)	28:	48	3/4		1/15	Greb
The state of the s	SAMPLE MEASUREMENT		n syrika	}		Service of the servic		-03/19			
J-total music	REQUIREMENT	* *	87.							यम	o Tra
HAME/TITLE PRINCIPAL EXECUTIVE	AND AI ON MY OBTAIN IS TRU NIFICAN THE PO	M FAMILIAR WITH THE PROUBLY OF THOSE INCOMETION OF THOSE INFORMATION OF AND COLOR OF THE AND COSSIBILITY OF FINE AND COSSIBILI	OF LAW THAT I MAVE I NOFORMATION SUBMITTE RODIVIOUALS IMMEDIATE IN. 1 BELIEVE THE SU MPLETE. I AM AWARE RUBMITTING FALSE INFO IMPRISONMENT SEE	D HEREIN, AN LLY RESPONSI BMITTED INFO THAT THERE ORMATION, IN 18 U.S.C. \$ 18	D BASED BLE FOR PRMATION ARE SIG ICLUDING COL AND	TURE OF PRINCIPAL	EXECUTIVE	TELEPHON	2	DA	TE
TYPED OR PRINTED	and or	mazimum (mprimment n	ler them statutes may in Thetween & months and 5 y a here)	riedr JINPA Mp Pera.i		ICER OR AUTHORIZE	D AGENT	ODE NUMB	ER	YEAR M	O DAY

acility Nome/Location if different) SC	2 con19	stadt		ARGE MO	NITORING REPO	(17.19)			OMB	Approv No. 204	10-0004
DDRESS			PERM	IT NUMBER		SOL			Expir	es 3-31-	88
•			-	MONI	TORING PERIC	OD					
ACILITY OCATION			PROM YEAR	MO D	AY TO YEAR	MO DAY	•				
			-	<u> </u>		78-29, 130-31, N	IOTE: Read instr	uctions before	completi	na this	form.
PARAMETER		(3 Card Only) QU (46-53)	ANTITY OR LOADIN		(4 Card Only) (38-45)	QUALITY OR CONG			NO FREO	UENCY	SAMPLE TYPE
(32-37)		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MUMIKAM	UNITS		-68)	(69-70)
bisC2-chloroethil	SAMPLE MEASUREMENT				·						
ether	PERMIT REQUIREMENT	***				Report	200	Mg/s	1	5	Grab
bis C2-Ethyl	SAMPLE MEASUREMENT				·			,			
hexyl) phthalate	PERMIT	** ************************************			21, 234	. 95	258	my/	1	5	Grub
Butyl Benzyl	SAMPLE MEASUREMENT										
Phthalate	PERMIT REQUIREMENT		1000		300	Keport	30	Mg/1	4	5	Grap
2-Chlownerph-	SAMPLE MEASUREMENT	*****	t. ₂ -					اروبد		-	
thalene	PERMIT REQUIREMENT	7.75				Report	* 57	XIC	1/1	5	Grab
Chaysene	SAMPLE MEASUREMENT					·	·	مروبل			
111/25/16	PERMIT ALQUINEMENT				***	7.19	47	113/2	1/	5	Grab
1,2-Dichloro-	SAMPLE MEASUREMENT	は は は は は は は は は は は は は は						وروبد			
pensene	PERMIT	7 7 7 7 7	12/2/2/2			\$198°	*794	UZ	1//		Grub
Diethyl-	SAMPLE MEASUREMENT							ugg			
Phthalate	PERMIT REQUIREMENT		Part of			46	113	0/2	1	5	Grab
ME TITLE PRINCIPAL EXECUTIVE		M FAMILIAR WITH THE	OF LAW THAT I HAVE INFORMATION SUBMITTI	ED HEREIN. AF	ND BASED			TELEPHONE		DAT	r E
C 3 0	OBTAIN IS TRU NIFICAL	NING THE INFORMATIO UE, ACCURATE AND CO NT PENALTIES FOR :	INDIVIDUALS IMMEDIAT IN. I BELIEVE THE SL OMPLETE. I AM AWARE BUBMITTING FALSE INI IND IMPRISONMENT SEE	IBMITTED INFO THAT THERE FORMATION, II	ORMATION ARE SIG	Was of Brivainal	even itius				
TYPED OR PRINTED	33 U S	C \$1319. IProalter un	der these statutes may to I between 8 months and 5	iclude fines up	to \$10,000	ure of Principal Cer or Authorize			R YEA	R MO	DAY
DMMENT AND EXPLANATION OF ANY	VIOLATIONS (R	eference all uttachmen	is here)								

GERMITTEE NAME ADDRESS (Include Facility Name/Location if different)	P Con	ustaalt	DISCH	ARGE MOI (2-16)		ON SYSTEM (NPUES) ORT IDMRI (17-19) OCI MARGE NUMBER				Form Appr OMB No. 2 Expires 3-3	2040-0004
'ACILITY			_	MONI	TORING PERI	OD					
OCATION			PROM YEAR	MO DA	TO YEAR	MO DAY					
			UANTITY OR LOADIN	<i>(22-23) (24-</i> IG	(4 Card Only)	QUALITY OR CON	NOTE: Read inst	tructions befo			.T
PARAMETER (32-37)	\times	(46-53) AVERAGE	. (54-61) MAXIMUM	UNITS	(<i>38-45</i>) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX	FREQUENCY OF ANALYSIS	TYPE
	SAMPLE								(62-63)	(64-68)	(69-70)
Dimethyl Phthalate	MEASUREME PERMIT REQUIREMEN		a market a			19	47	- mg/l		145	Grap
Di-n- buty1	SAMPLE MEASUREME							1.04			
Phthalate	PERMIT REQUIREMEN	it				10	43	my/l		145	Grab
Fluodanthene	SAMPLE MEASUREME							Jan 10		varioù a ave	
	PERMIT	n in	. 1176.127		124 5 1344	7.11	54	eng/l		1/15	Grap
Flyonene	MEASUREME!	NT						ug/g	33300		
	REQUIREMEN	σ				B-14	* 47			1/15	Grab
Indenoci,2,3e								45/1		,	
d) prosene	PERMIT					Keport	24	37		1/17	Grah
Isophozone	SAMPLE MEASUREME	VT						119/1			
	PERMIT		\$ 5.75 P.		7: 19:	Report	*85			1/15	Grab
Naphthalene	MEABUREME							45/1			
	PERMIT REQUIREMEN	т				19	147			15	Court
NAME/TITLE PRINCIPAL EXECUTIVE	- AN	AM FAMILIAR WITH TH SOHT OF THOUSIVE W	OF LAW THAT I HAVE E INFORMATION SUBMITTE E INDIVIDUALS IMMEDIAT	ED HEREIN, AN ELY RESPONSI	D BASED BLE FOR	-1		TELEPHONE	2	D A	TE
304	IS NIF	TRUE, ACCURATE AND (ICANT PENALTIES FOR C POSSIBILITY OF FINE (ION, I BELIEVE THE SL COMPLETE I AM AWARE SUBMITTING FALSE IN AND IMPRISONMENT BEE	THAT THERE FORMATION, IN 18 U.S.C. \$ 1	ARE SIG	URE OF PRINCIPAL	EXECUTIVE	1			
TYPED OR PRINTED	end	ur mezimum imprimiment	inder these statutes may is i of between 6 months and 5	rriude fines up vears.)	10 \$107,000	CER OR AUTHORIZ	ED AGENT	REA NUMB	ER	YEAR N	O DAY
COMMENT AND EXPLANATION OF ANY	, violations	trejerence all uttachme	nis nere)								

ERMITTEE NAME/ADDRESS (Include acility Name/Location if different)	P Can	stadt	DISCH							Form Appro OMB No. 2 Expires 3-3	040-0004
			-	MONI	TORING PERIC)D					
OCATION			FROM YEAR	MO D	AY TO YEAR	MO DAY					
			720-21)	<u> /22-23) /24</u>	·23) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	28-29) (30-31) N	IOTE: Read instru	ctions befor	e com	pleting thi	s form.
PARAMETER		(3 Card Only) QU. (46-33)	ANTITY OR LOADIN	9	(4 Card Only) (38-45)	QUALITY OR CONG	CENTRATION (54-61)		NO.	FREQUENCY	SAMPLE
(32-37)		AVERAGE	MAXIMUM	UNITS MINIMUM		AVERAGE	MAXIMUM	UNITS	EX (62-63)	484-68)	169-7U)
Nibala	SAMPLE MEASUREMENT							110/0	-		
Nitrobenzene	PERMIT		*****		7	2237	6401	49/4		1/15	Grub
Phenanthrene	SAMPLE MEASUREMENT							1.04			
. dentillassed	PERMIT REQUIREMENT	1. 1. 1. 1. 1. 1.	Here's		A AMERICA	. 19	47	119/1		1/15	Grab
Pana	SAMPLE MEASUREMENT	·						lig/g			
Przene	PERUITO PEOUS PERUITO	* * * * * * * * * * * * * * * * * * *	March 1.		130	E 20	48	·~5/Ł		15	Grab
Beta-BHC	SAMPLE MEASUREMENT					·		140.44			
	PERMIT REQUIREMENT					Report	1006	49/1		坊	Grab
4-4-777	SAMPLE MEASUREMENT							nale			
4-4-DDT EAPlact	PERMIT N	NA	3 75 7 F	16/day	NA	TUA	828/2	ughl	3.0	1/7	Grab
4-4-DDT	SAMPLE MEASUREMENT			16/day	·			مار م		,	
See Comment Below	PEGUINEMENT	EURE-7	198847	17 Jaky	N/#	10.0004	8,000	ug/l		1/7	Grab
Endosulfan I	SAMPLE MEASUREMENT							ugh			
Etllnent	PERMIT REQUIREMENT	VIA	ACCE	14/day	~// ~ "	110	8.014	7/12		1/7	6.4
NAME FIRLE PRINCIPAL EXECUTIVE	AND A	M FAMILIAR WITH THE	OF LAW THAT I HAVE I	O HEREIN, AI	ND BASED			TELEPHONE		D A	TE
30	OBTAIN IS TRU MIFICAL	IING THE INFORMATION IE. ACCURATE AND CO NT PENALTIES FOR S	INDIVIDUALS IMMEDIATI N, I BELIEVE THE SU IMPLETE I AM AWARE SUBMITTING FALSE INF	BMITTED INFO THAT THERE ORMATION, I	ORMATION ARE SIG			· .			
TYPED OR PRINTED	and w	C \$1319. (Penalties und maximum imprissiment q	ID IMPRISONMENT SEE for these statutes may in the fee atatutes may in the fee and 5 y	clude fines up	to \$10,000	URE OF PRINCIPAL CER OR AUTHORIZI	7 7 7 7		€R	YEAR N	O DAY
This parameter is				and	will not	be used ?	to determi	ne dir	clini	ge cor	yliance

PA Form 3320-1 (Rev. 10-79) PREVIOUS EDITION TO BE USED UNTIL SUPPLY IS EXHAUSTED.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different) SC	P Canli	tadt_	DISCH	UTANT DISC ARGE MO (2-16)		N SYSTEM (NYDES) ORT (DMR) (17-19) DO (HARGE NUMBER			Form Ap OMB No Expires	0. 2040-0004
			-	MONI	TORING PERIC	OD		·		•
ACILITY			PROM YEAR	MO D	AY TO YEAR	MO DAY				
				(22-23) (24			OTE: Read instru	ctions before	completing	this form.
PARAMETER		(3 Card Only) QUA (46-53)	ANTITY OR LOADING (54-61)		(4 Card Only) (38-45)	QUALITY OR CONG (46-53)	(54-61)		NO. FREQUE	37005
(32-37)		AVERAGE	MAXIMUM	UNITE	MINIMUM	AVERAGE	MUMIXAM	IINITE	2-63) (64-68	?''
EndosulfanI	SAMPLE MEASUREMENT			16/day				ugh		
see Comment Below	REQUIREMENT.	2.1E28	41XE-6	10/204	N/A	. 0 . 603 C	0. 0072	Agh	1/7	Grad
	SAMPLE MEASUREMENT		-	'					İ	
Endrin Effluent	PERMIT	PA	N/A	11/day	V/A	-/4	6.606	MALL	1	7 6ml
	SAMPLE MEASUREMENT									
Endrin See Comment Below	PERMIT REQUIREMENT	COEST	1/2/E-6	16/day	V/4 "	0.001	8.002	mple	1/7	Benk
	SAMPLE MEASUREMENT									
PcBs	PERMIT REQUIREMENT	44	174				2	will	1/2	brah
	SAMPLE MEABUREMENT		· · · · · · · · · · · · · · · · · · ·			-				
0.0				11/2			-	- 11		
PCBs	PERMIT REQUIREMENT	72 53 5	NA SIES	10/00-4	NIA	8,872	8:025	49/2	1/2	Brak
0	SAMPLE MEASUREMENT							10		
Arsenic	PERMIT ARQUINEMENT	6,0735	FEEST	16/8-7	2/3	7 57	**52.	usle	1/7	7 Grad
Beryllium	SAMPLE MEASUREMENT							1.10		
=======================================	PERMIT REQUIREMENT		A STATE OF		u/#	Report	3	All	1/5	
NAME/TITLE PRINCIPAL EXECUTIVE CO TYPED OR PRINTED	AND AI ON MY OBTAIN IS TRU NIFICAN THE O	IFY UNDER PENALTY OF M FAMILIAR WITH THE POST OF THOSE ING THE INFORMATION OF ENALTHER FOR B 5 1319. Penalties and 5 1319. Penalties and maximum impromment of	INFORMATION SUBMITY INDIVIDUALS IMMEDIAT I. I BELIEVE THE SL MPLETE. I AM AWARE UBMITTING FALSE INI D IMPRISONMENT SEE (or these statutes mey in	ED MEREIN, AI ELY RESPONS JBMITTED INF THAT THERE FORMATION, I 18 U.S.C. I Include (unex up	ND BASED HORE FOR ORMATION ARE SIGNATION INDUSTRIES IND	URE OF PRINCIPAL CER OR AUTHORIZI	- X 100 P			
This parameter is	for report	perence all uttachment	only and	will n	othe used	to determ			omplie	ence.

EPA Form 3320-1 (Rev. 10-79) PREVIOUS EDITION TO BE USED UNTIL SUPPLY IS EXHAUSTED.

ermittee HAME; ADDRESS (Include ocility Name/Location if different)	<u> </u>	stadt	NATIONAL POLI DISCH	ARGE MOI	HARGE ELIMINATION	NEVETEM (NEDES) ORT (DMR) (17-19)			OMB N	pproved c. 2040-0004 3-31-88
DDRESS		. — — — — — —	PERM	IT NUMBER		IARGE HUMBER				
			-	MONI	TORING PERIC	DD				
ACILITY OCATION			PROM YEAR	MO D	AY YEAR	MO DAY				
			- L	(22-23) (24-		28-29, 130-31, N	OTE: Read instru	ctions before	completing	this form.
PARAMETER		(3 Card Only) QU: (46-33)	TOTAL	CONCENTRATION						
(32-37)		AVERAGE	MAXIMUM	BTINU	MINIMUM	AVERAGE	MAXIMUM	LINITE		1 .
Cadmium	SAMPLE MEASUREMENT	·		ull				1.010		
	PERMIT PEOPLE PROPERTY	0.0042	310016	May	V/A	8	16	~9/1	1/7	Comp
chromium,	SAMPLE MEASUREMENT							149/0		
total	PERMIT		ales in		4/4	, 500	1660	**	1/1:	5 Comp
Chromium,	SAMPLE MEASUREMENT									
Hexavalent	PERMIT				2/4	? 5 0	160	~9/ <i>I</i>	45	Comp.
Coppas	SAMPLE MEASUREMENT		•				·	na/a		
Efflaent	PENNIT		MALE:		N/A	RAPPIT	1.0		1/7	Comp.
Cuppes	SAMPLE MEASUREMENT				### ##################################			واوس		
See Comment Below	PERMIT NEGLINEMENT		A Control		V/A	N. NO	לע		1/7	Comp
Lead.	SAMPLE MEASUREMENT	A SP		16/1				29/1		•
		61803	71866	1909	V/A	% :5:	* 16		17	Comp.
Mercury	MEASUREMENT	evis vanst op						29/1		Proc.
IffInent '	SAMPLE MEASUREMENT PERMIT REQUIREMENT SAMPLE MEASUREMENT PERMIT REQUIREMENT REQUIREMENT ON MY IN OBTAINING IS TRUE.				×/4	Kerit	6.7	//	1/:	Comp
NAMESTITLE PRINCIPAL EXECUTIVE	ANO AI ON MY OBTAIN IS TRU	M FAMILIAR WITH THE INQUIRY OF THOSE ING THE INFORMATION IE. ACCURATE AND CO	INFORMATION SUBMITS INDIVIDUALS IMMEDIAT N, I BELIEVE THE SU IMPLETE. I AM AWARE	ED HEREIN, AN ELY RESPONS JBMITTED INFO THAT THERE	ND BASED IBLE FOR DRMATION ARE SIG			TELEPHONE		DATE
TYPED OR PRINTED	THE PO	OSSIBILITY OF FINE AN C \$ 1319, I Proellier und maximum impromment o	D IMPRISONMENT SEE for these statutes may in f hotusen 6 minites and 5	18 U.S.C. § 1 selude (inex up	1001 AND SIGNAT		D AGENT ARE		YEAR	MO DAY
This garameter is	for report	reference all attachment	is here) is only an	d w:11	not be use	1 to dete	remine dis	charge	compli	larce,

FPA Form 3320-1 (Rev. 10-79) PREVIOUS EDITION TO BE USED UNTIL SUPPLY IS EXHAUSTED.

cility Name/Location if differenti	P Cas	Istadt		ARGE MONI (2-16)		N SYSTEM (NPUES) ORT (DMR) (17-19) MARGE RUMBER				Form Appro OMB No. 20 Expires 3-3	040-0004
ACILITY			-		ORING PERIO			•			
CATION		·	- PROM YEAR	MO DAY	TO YEAR	MO DAY 28-29) /3(-31) N	OTE: Read instr	uctions befo	re com	pleting thi	s form.
PARAMETER		(3 Card Only) QU/ (46-53)			Card Only) (38-45)	QUALITY OR CONCENTRATION (46-53) (54-61)		 	NO.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
(32-37)		AVERAGE	MUMIXAM	UNITE	MINIMUM	AVERAGE	MAXIMUM	UNITS	(62-63)		(69-70)
Mexcusy	SAMPLE MEASUREMENT							anda			
Sce Comment Below	PERMIT REQUIREMENT		e promotes		N/A	NO	M	Mole		1/7	Comp,
Niekel	SAMPLE MEASUREMENT										
162815	PERMIT		Mark Co.		N/A	Roport	1.0	11/2		1/7	Comp.
Nickel	SAMPLE MEASUREMENT							40.6			
	PERMIT REQUIREMENT				ا ۱۸	* X/ D	מא	mafle		1/7	Comp
5:1.404	SAMPLE MEASUREMENT	•	•	11/1							
Silver	PENMIT	0.0007	818815	16/804	V/A	lli23	2:46	ug/s		1/7	Comp
Zinc	SAMPLE MEASUREMENT						-				
	PERMIT REQUIREMENT				\(\mu/\beta\)	282914	0.05	MA		1/7	Comp
7.	SAMPLE MEASUREMENT							- 44/4			
Zinc See Comment Below	PERMIT ARGUIREMENT				1/1	XXX	N.	mofe		1/7	Comp.
Chronic Toxicity	SAMPLE MEASUREMENT							0/			
Mysld Shring TAPIE 23	REQUIREMENT		" N/N		· /Y			%			
AME/TITLE PRINCIPAL EXECUTIVE	AND AI	M FAMILIAR WITH THE	OF LAW THAT I HAVE INFORMATION SUBMITTE	ID HEREIN, AND ELY RESPONSIBL	BASED E FOR			TELEPHON	Ľ	D A	TE
<u>ှင်</u> ဝ	IS TRU NIFICAN THE PO	IE. ACCURATE AND CO HT PENALTIES FOR S DSSIBILITY OF FINE AN	N, I BELIEVE THE SU MPLETE I AM AWARE SUBMITTING FALSE INF ID IMPRISONMENT SEE for their statistic may in	THAT THERE AR ORMATION, INCL 18 U.S.C \$ 100	UDING	URE OF PRINCIPAL	EXECUTIVE				
TYPED OR PRINTED	and we	mazinum (mprieimment il)	f heliven 6 minths and 5 y	Para.i		CER OR AUTHORIZE	D AGENT CO	DE NUME	ER	YEAR M	O DAY

This parameter is for importing purposes only and will not be used to determine discharge compliance.

AME SOURCES	CP Cou	Nshadi	Disch	ARGE MON (2-16)	IITORING REP	ORT (DMR) (17-19) CHARGE HUMBER			(Form Appro- OMB No. 20 Expires 3-31	40-0004
			-	MONIT	ORING PERI	OD					
CILITY DEATION			PROM YEAR	MO DA	Y TO YEAR	MO DAY	•				
			120-21)	(22-23) (24-2		/28-29) /30-31) I	NOTE: Read instruct	ions before	com	pleting this	form.
PARAMETER		(J Card Only) QU (46-33)	ANTITY OR LOADIN . (54-61)			QUALITY OR CON (46-33)	CENTRATION (54-61)		NO.	FREQUENCY OF ANALYSIS	SAMPLE
(32-37)		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	EX 62-63)		TYPE (69-70)
Chronic Toxicity	SAMPLE MEASUREMENT							0/			
leeps head 17 innow TBPGA 33	REGUINEMENT	D/F	7177		79			%			
Chronic Toxicity	SAMPLE MEASUREMENT							%			
and Silverside TAPBB 23	PERMIT. NEQUIREMENT	V/A	2/1		79			/•			
	SAMPLE MEASUREMENT	·									
	PERMIT REQUIREMENT										Service Service
	SAMPLE MEASUREMENT				· .		·			-	
	PENHIT REQUIREMENT			·							
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT				77 - 74		* : 4				
	SAMPLE MEASUREMENT										·
	REQUIREMENT				79. 7.19	7 19:		8			
	SAMPLE MEASUREMENT										
<i>c</i>	REQUIREMENT		30.50								. :
AMEGTSTLE PRINCIPAL EXECUTIVE	ANO A	M FAMILIAN WITH THE	OF LAW THAT I HAVE INFORMATION BUBMITT	EO HEREIN, AN	D BASEO			ELEPHONE		. DA	TE
∂30	OSTAIN IS TRU NIFICAL	ING THE INFORMATION IE. ACCURATE AND CI INT PENALTIES FOR !	INDIVIDUALS IMMEDIAT IN. I BELIEVE THE SL DIMPLETE. I AM AWARE BUSMITTING FALSE INI NO IMPRISONMENT SEE	BMITTED INFO THAT THERE FORMATION, IN	ARE SIG			1			
O) TYPED OR PRINTED	33 U S •	C § 1319. <i>lPenalties u</i> n	der these statutes may s I between 8 months and 5	iclude fines up i	in \$10,000 SIGNA	ture of Principal Icer or Authoriz	ED AGENT AREA	NUMBE	R	YEAR M	O DAY
DATE TO DESCRIPTION OF ANY	and or	mezimum impromment o	f between 6 months and 5			ICER OR AUTHORIZ	ED AGENT AREA CODE	NUMBE	R	YEAR M	0